



National Energy Board

Reasons for Decision

**TransCanada PipeLines
Limited**

GH-2-96



May 1996

Facilities

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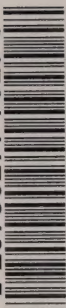


Table of Contents

Part A Report

National Energy Board

Introduction

Reasons for Decision

Findings and Recommendations

1. Introduction

In the Matter of

1.1 Background

1.2 Environmental Context

2. Findings

TransCanada PipeLines Limited

3. Project Description

4. Environmental Assessment

4.1 Description of the Project

Application dated 19 December 1995 for a
Crossing of the St. Clair River

4.2 Environmental Effects

5. Conclusion

GH-2-96

May 1996

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Table of Contents

List of Figures	ii
List of Appendices	ii
Abbreviations	iii
Recital and Appearances	v
1. Introduction	1
1.1 Background	1
1.2 Environmental Screening	1
2. Facilities	2
3. Purpose and Justification	4
4. Land, Environmental and Socio-Economic Matters	8
4.1 Route Selection and Land Requirements	8
4.2 Environmental Matters	10
4.3 Socio-Economic Matters	10
5. Disposition	12

List of Figures

2-1	Location of Proposed Facilities	3
4-1	Land Requirements for the Proposed St. Clair River Crossing	9

List of Appendices

I	Order XG-T1-26-96	13
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Abbreviations

Act	<i>National Energy Board Act</i>
Bcf	billion cubic feet
Board, NEB	National Energy Board
CEAA	<i>Canadian Environmental Assessment Act</i>
Centra	Centra Gas Ontario Inc.
Chippewas	Chippewas of Sarnia Band
Consumers'	Consumers' Gas Company Ltd. (The)
EPN	Early Publication Notification
FST	Firm Service Tendered
FT	Firm Transportation
GH-3-95	Hearing Order GH-3-95 in respect of TransCanada's application for 1996-97 facilities
Great Lakes	Great Lakes Gas Transmission Limited Partnership
km	kilometre(s)
kPa	kiloPascals
m	metre(s)
m ³	cubic metres
m ³ /d	cubic metres per day
MMcfd	million cubic feet per day
MOEE	Ontario Ministry of Environment and Energy
O.D.	outside diameter
TransCanada	TransCanada PipeLines Limited
U.S.	United States of America
Union	Union Gas Limited

WFS

Winter Firm Service

WIFN

Walpole Island First Nation

Recital and Appearances

IN THE MATTER OF the National Energy Board Act and the regulations made thereunder; and

IN THE MATTER OF an application dated 19 December 1995 by TransCanada PipeLines Limited, for an order, pursuant to section 58 of the Act, for the construction of a crossing of the St. Clair River and a pig receiver at the Dawn - Tecumseh Sales Meter Facility; and

IN THE MATTER OF Hearing Order GH-2-96,


HEARD in London, Ontario on 26 and 27 March 1996.

BEFORE:

R. Illing	Presiding Member
K.W. Vollman	Member
R.L. Andrew	Member

APPEARANCES:

M. Forster	TransCanada PipeLines Limited
J. Gschwendtner	
H.T. Soudek	The Consumers' Gas Company Ltd.
M.L. Perlman	Rochester Gas and Electric Corporation
I. Leadley	Union Gas Limited and Centra Gas Ontario Inc.
J. Turchin	Minister of Environment and Energy for Ontario
C. Beauchemin	Board Counsel



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Chapter 1

Introduction

1.1 Background

By application dated 19 December 1995 TransCanada PipeLines Limited ("TransCanada" or "the Applicant") applied to the National Energy Board ("the Board" or "NEB") pursuant to Part III of the *National Energy Board Act* ("the Act") for an order, pursuant to section 58 of the Act, to construct new pipeline facilities on its mainline transmission system. The proposed facilities included a 0.4 km directionally drilled crossing of the St. Clair River that had originally been included in TransCanada's 1996-97 Facilities Application, Hearing Order GH-3-95. At that time, TransCanada was involved in discussions with the Walpole Island First Nation ("WIFN") regarding the concerns of WIFN in respect of the potential environmental impacts of the crossing. Unable to achieve a consensus prior to the GH-3-95 hearing, TransCanada requested that the St. Clair River Crossing be withdrawn from the 1996-97 Facilities Application to allow additional time for negotiations with WIFN. By letter dated 12 September 1995 the Board acknowledged TransCanada's request and all matters concerning the St. Clair River Crossing were withdrawn from the GH-3-95 proceeding.

By letter dated 19 January 1996 Counsel for WIFN indicated that WIFN wished to intervene in the GH-2-96 proceeding, and outlined a number of concerns with respect to the proposed directional drill of the St. Clair River, including the potential of inadvertent returns of drilling fluid and the consequent impacts on WIFN's interests. In response to environmental concerns expressed by WIFN and to concerns expressed by The Consumers' Gas Company Ltd. ("Consumers'") regarding the need for the proposed facilities, the Board decided to convene a public hearing in London, Ontario to examine TransCanada's application. The hearing was held on 26 and 27 March 1996.

By letter dated 25 March 1996, counsel for WIFN advised the Board that it was satisfied that its concerns would be addressed through conditions of approval that had been negotiated with TransCanada. Accordingly, WIFN withdrew its opposition to the application and indicated that TransCanada would file at the hearing the conditions of approval for consideration by the Board.

1.2 Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with section 18 of the *Canadian Environmental Assessment Act* ("CEAA"). The Board ensured that there was no duplication in the requirements under the CEAA and the Board's own regulatory process.

Chapter 2

Facilities

The facilities included in TransCanada's 19 December 1995 application consist of a 0.4 km crossing of the St. Clair River from the international border to MLV 501 and a NPS 42 pig receiver assembly at the Dawn - Tecumseh Sales Meter Facility (Refer to Figure 2.1). The proposed crossing would provide an additional $3.33 \times 10^6 \text{ m}^3/\text{d}$ (118 MMcfd) of capacity on the Dawn Extension. The estimated cost of the facilities is \$4.18 million (1995\$), with construction scheduled for completion in 1996.

The proposed 914 mm O.D. pipeline loop, Line 500-3, will connect upstream to proposed facilities to be built concurrently on the Great Lakes system, and will connect downstream to existing Line 500-2 by way of a mainline valve with an upstream tie-over to Line 500-1. The pipe is designed for a maximum operating pressure of 6 895 kPa with 14.0 mm wall thickness and a two-part urethane over fusion bond coating. The proposed pig receiving device will be installed at the termination of Line 500-2 at TransCanada's Dawn-Tecumseh Sales Meter Facility.

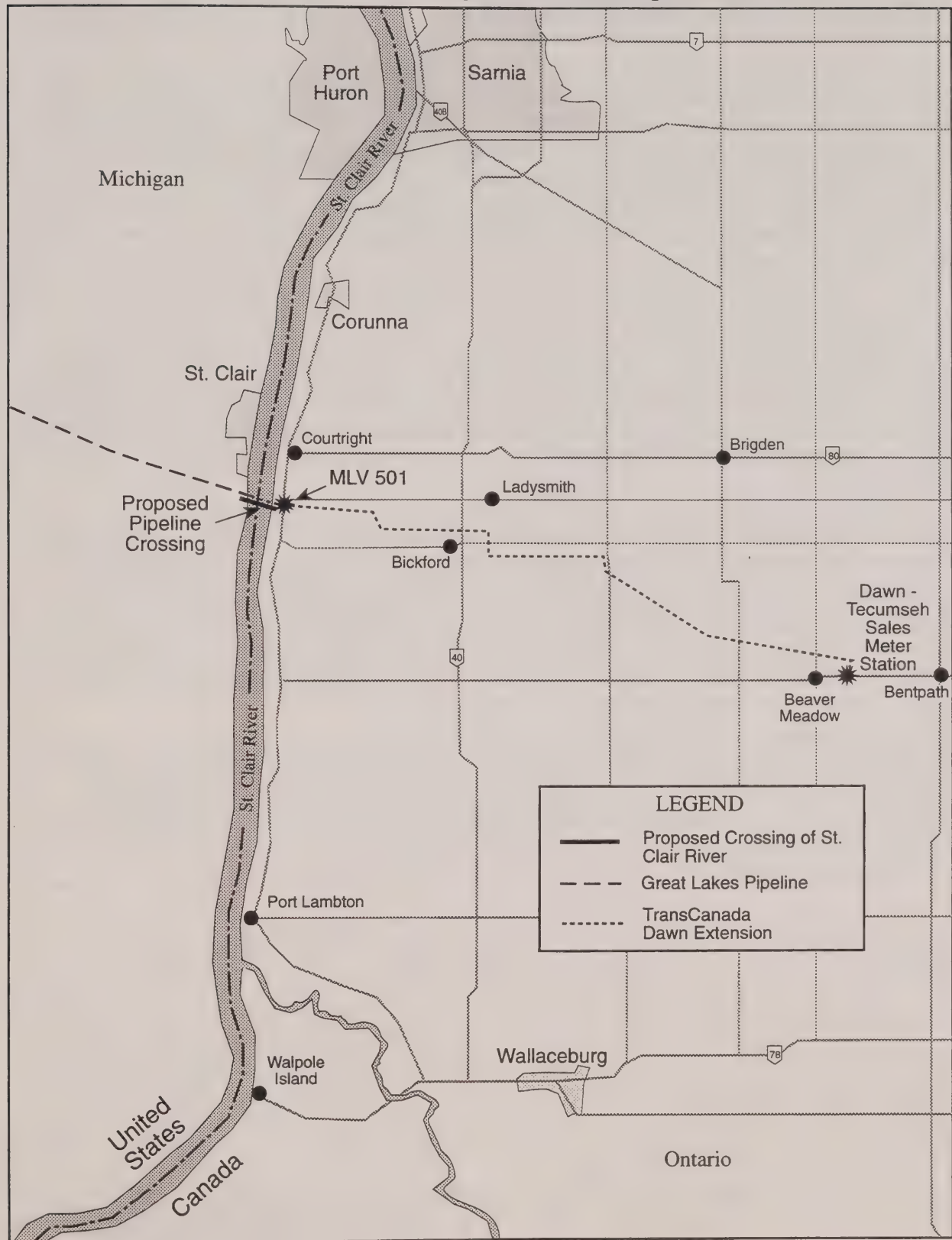
TransCanada indicated that the applied-for 0.4 km crossing, representing the Canadian portion of the river crossing, will be directionally drilled from the U.S. side of the St. Clair River for a total drilled length of approximately 0.8 km. The pipe will be pulled back through the directionally drilled hole from the Canadian side at a depth of approximately 10 m below the river bed, in material described as clay till.

No party challenged the technical details or safety aspects of the design for either the proposed river crossing or the pig receiver. Consumers', however, expressed concern with the quality of the data that TransCanada relies on to design its system, data that is also used by various parties to assess the need for additional facilities. TransCanada countered that its data was not suspect, and that Consumers' was attempting to use the data inappropriately.

Views of the Board

The Board is satisfied that the proposed facilities have been designed and will be constructed and operated in accordance with the requirements of the Act and the *Onshore Pipeline Regulations* and that TransCanada has demonstrated that it will complete the directionally-drilled crossing in a timely fashion, within acceptable limits of accuracy and with due regard for safety and the environment.

Figure 2-1
Location of Proposed Facilities
St. Clair River Crossing, TransCanada PipeLines Limited



Chapter 3

Purpose and Justification

TransCanada submitted that the proposed facilities would enable TransCanada to match the flow-out capacity of the Great Lakes system under all design day conditions, would provide additional security in the event of the loss of one of TransCanada's existing crossings of the St. Clair River, and would allow TransCanada to provide additional discretionary services in response to market dynamics.

TransCanada further submitted that the justification for the proposed facilities is not based on new incremental Firm Transportation ("FT") requirements and, subsequently, did not submit evidence with regard to gas supply and gas markets.

TransCanada argued that the St. Clair River crossing is currently operating at very close to full capacity. The existing twin 610 mm (24 inch) crossing was installed in 1967 to work with a single 914 mm (36 inch) supply line from the Great Lakes system on the U.S. side and a similar 914 mm line on the Canadian side to take gas to Dawn. Since that time both of the 914 mm lines have been looped with parallel 914 mm lines. This has resulted in a bottleneck at the river crossing in the sense that the current capacity of the St. Clair River Crossing is only about 35% of the capacity of the connecting pipelines.

TransCanada indicated that its historical design philosophy for the Dawn extension has been to match the flow-out capacity of the Great Lakes system at St. Clair. The applied-for facilities would provide TransCanada with sufficient additional capacity to closely match the current surplus capability of $3.20 \times 10^6 \text{ m}^3/\text{d}$ (113 MMcfd) available on the Great Lakes system on a Winter Peak Day, effectively completing the first loop of the Dawn extension. TransCanada submitted that the current mismatch, although not justification for the new facilities in itself, would provide an opportunity to provide increased capacity on an interruptible basis at minimal cost.

TransCanada has not conducted an internal inspection of either pipeline at the existing crossing due to physical and operating constraints. TransCanada expressed concern that it could not meet its firm commitments if a line were to be taken out of service to allow for pigging, which would require that the line be shut down for a week to ten days, or in the event of unplanned outages which could be of up to two months in duration.

TransCanada estimated that if one of the existing pipelines at the crossing were lost from service, the capacity on TransCanada's Dawn Extension would be reduced by $10.0 \times 10^6 \text{ m}^3/\text{d}$ (353 MMcfd).

TransCanada submitted that the installation of the proposed 914 mm crossing would eliminate any supply concerns associated with maintenance or repair of the existing lines. The new facilities would also provide flexibility to maintain firm service deliveries in the event of a capacity restriction on the Central Section of TransCanada's system. The additional capacity that would be created by the looping of the river crossing could also be used to transport discretionary volumes. Additional volumes could be in the form of short-haul transportation of U.S.-sourced gas or long-haul transportation of Western Canadian gas.

TransCanada further indicated that the St. Clair River Crossing is one of only three of the 112 major water crossings on the TransCanada system without an adjacent alternate pipeline crossing to allow

continuing service in the event of an outage. The other two crossings, the St. Lawrence and Niagara Rivers are more recent installations and are constructed with new pipe and modern coating technology. Also, the St. Lawrence and Niagara River crossings were inspected at the time of installation and have pig launchers and receivers in place.

MOEE, Union and Centra supported construction of the facilities. MOEE submitted that the crossing would bring additional supply of natural gas into the Province which would be of benefit to Ontario based purchasers of natural gas. Union and Centra supported the application and considered it appropriate to provide for the additional security afforded by the river crossing. Union and Centra further suggested that the additional capacity would also afford customers valued supply and capacity flexibility on the TransCanada system that they characterized as being "extremely tight". Centra believed that, in addition to the immediate security afforded at the river crossing, the additional capacity could prove beneficial to its customers if unforeseen operational or maintenance considerations restricted the delivery capacity on TransCanada's Northern delivery system.

Consumers' opposed the application on the basis that the facilities were not justified on the grounds advanced by the Applicant, that being to match the flow-out capability of the Great Lakes system with the flow-in capability of the Dawn Extension and to provide security of supply. Consumers' further submitted that the facilities were not justified on any grounds and that at stake was an important point of principle and precedent.

Consumers' indicated that in the past it has supported the concept of "advance capability" where Consumers' understood "advance capability" to mean a certain level of incremental capacity over and above TransCanada's firm requirements that would be available to move gas across the entire system. Consumers' contended that the incremental capacity created by the addition of the proposed facilities cannot be used on a firm year-round basis to move gas from Empress to Parkway/Kirkwall without the addition of further TransCanada facilities and an increase in TransCanada's firm transportation service entitlement with Great Lakes and Union.

With regard to matching flow-in and flow-out capabilities, Consumers' stated that without the applied-for facilities, the flow-in capability of the Dawn Extension currently exceeds the flow-out capability of the Great Lakes system in all cases except Winter Peak Day. With regard to the need for additional capacity, Consumers' stated that the actual physical deliveries have not met the flow-in capability of the Dawn extension during each Winter Peak Day in the past four years. As a result, Consumers' argued that TransCanada already has the ability to meet firm and interruptible capacity requests and that no bottleneck exists.

With regard to security, Consumers' submitted that TransCanada had no reason to suspect the integrity of the existing crossing, which TransCanada expected to remain in service for another 30 years. Therefore, Consumers' concluded that TransCanada's primary security concern is its ability to internally inspect the existing crossings. During the hearing, Consumers' conducted detailed cross-examination to demonstrate that TransCanada could theoretically meet its contractual obligations in the event that a planned inspection resulted in follow-up maintenance of up to 60 days at the beginning of a Winter or Summer Period. Consumers' argued that firm service requirements during an outage could be met through the use of excess capacity at Dawn along with curtailment of Firm Service Tendered ("FST") deliveries throughout the outage period, followed by increased FST deliveries to meet seasonal FST delivery requirements.

Consumers' submitted that the ability to meet FST commitments in the event of a planned outage exists over and above: the "safety net" provided by the capability factor; the additional Winter Firm Service ("WFS") entitlement of $1.416 \times 10^6 \text{ m}^3/\text{d}$ (50 MMcfd) on the Great Lakes system not underpinned by FT contracts; and, the design excess at Dawn/Parkway shown in TransCanada's Capabilities versus Requirements calculations. Consumers' further noted that inspection of the river crossings would only be carried out every five to ten years. Consumers' also submitted that TransCanada had not fully explored alternatives to the construction of the crossing, and suggested that through cooperative arrangements with Great Lakes and/or Union to vary the pressures at which the gas is received and delivered, the capacity of the existing crossing could be increased to compensate during make-up periods for an outage.

TransCanada argued that it was already running a very tight system and that the Consumers' examples assumed a planned outage at the beginning of a winter or summer period, and did not address an unplanned outage. TransCanada also submitted that Consumers' ignored practical system constraints by referring only to contractual entitlements.

Views of the Board

The Board observes that much of the debate during the hearing involved the detailed examination of the likelihood and duration of an outage at the existing crossing and of TransCanada's need for additional flexibility to meet shippers' requirements. The Board acknowledges Consumers' argument that, under certain conditions, TransCanada could make arrangements to accommodate outages at the crossing in its present configuration. The Board, however, notes that much of the flexibility available to TransCanada exists as a result of provisions in FST contracts and that most of this flexibility could be required to accommodate a planned outage. The Board is not persuaded that there would be enough flexibility in TransCanada's system to accommodate an unplanned outage of significant duration at the crossing.

The Board recognizes producer and user concerns for long-term reliable supply sources and transportation facilities to serve domestic and export markets. The Board notes, as well, the support of MOEE, Union and Centra for the proposed facilities. Within this context, the Board is of the view that the existing twin 610 mm crossing of the St. Clair River constitutes a bottleneck limiting the potential flow of gas through the adjoining twin 914 mm lines. It is also apparent to the Board that a failure of one of the 28-year-old pipes in the river bed could cause a major and lengthy disruption in the flow of gas, and would significantly further narrow the existing bottleneck. Such a disruption could be particularly significant if it occurred in a period when there were delivery constraints on TransCanada's Northern delivery system. The fact that the existing crossing pipes are 28 years old, and have not been inspected, is a significant concern to the Board as experience elsewhere on the TransCanada system shows that line ruptures can occur unexpectedly where there has not been inline inspection or hydrostatic re-testing. With these considerations in mind, and in noting the modest capital investment involved, the Board concludes that construction of the proposed facilities is justified.

With respect to Consumers' concerns that approval of this application would set a new precedent, the Board notes that its decisions are based on the facts of each case and this decision, based on a unique set of facts, does not establish a new principle or precedent.

Chapter 4

Land, Environmental and Socio-Economic Matters

4.1 Route Selection and Land Requirements

TransCanada stated that, in accordance with the general route selection process followed by TransCanada, an alternative route comparison for the St. Clair River Crossing was undertaken. Based on an assessment of environmental, socio-economic and engineering constraints, TransCanada concluded that the existing TransCanada pipeline crossing location is the preferred route. The alignment of this preferred route is effectively a straight line between existing facility termini. Any alternative route would be longer and concomitant environmental, socio-economic and engineering impacts would arise in proportion to the additional length.

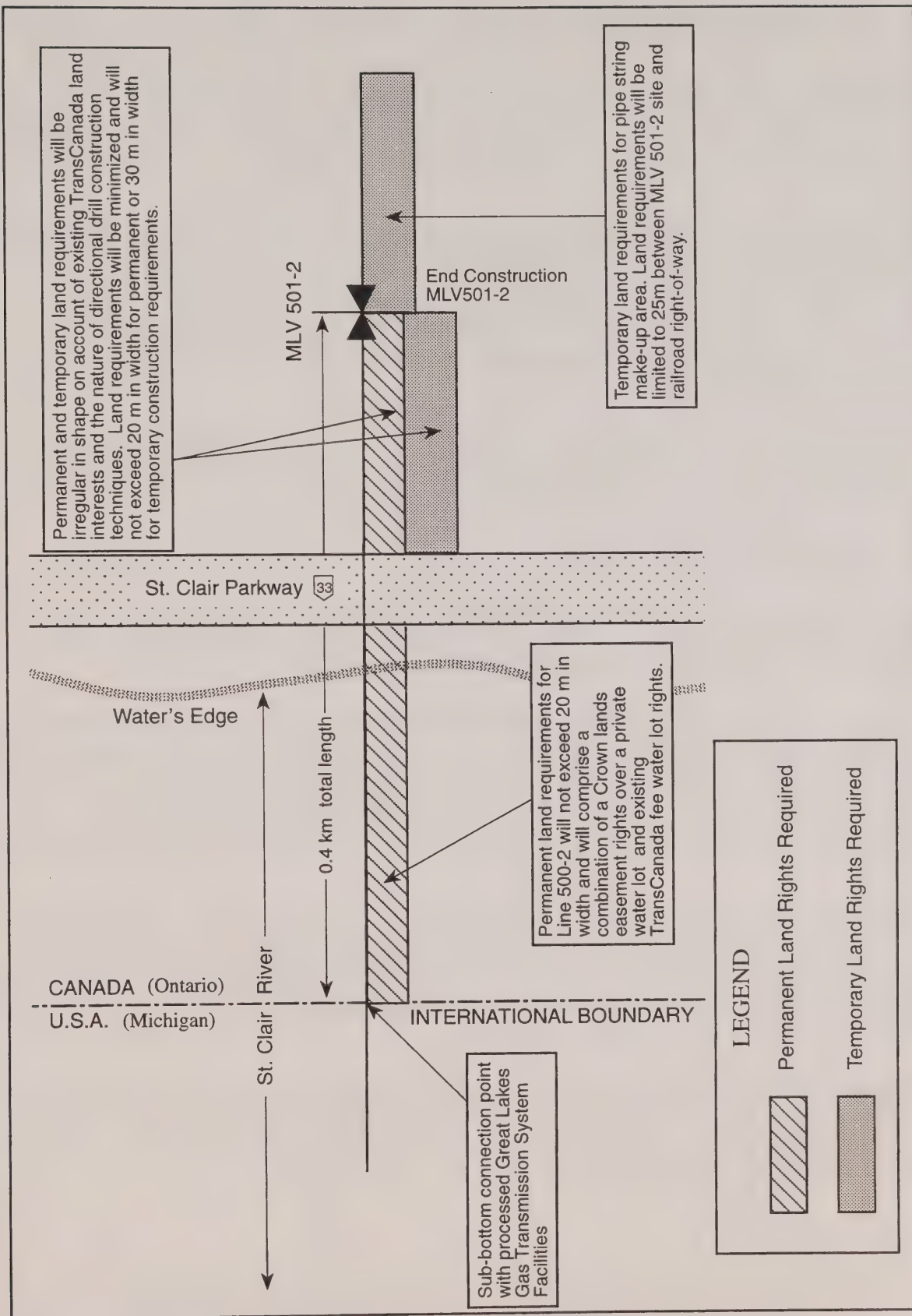
TransCanada provided a schematic setting out the land requirements for the proposed facilities. The schematic indicates that the project would require a permanent easement in the river together with a permanent easement on land and some temporary work room. A modified version of TransCanada's schematic is presented as Figure 4.1

TransCanada indicated that it has acquired all necessary permanent and temporary land rights on private lands. TransCanada further indicated that it is presently applying to the Ontario Ministry of Natural Resources for a Crown lands easement for the river portion.

Views of the Board

The Board agrees with TransCanada's rationale for installing the proposed pipeline at its existing pipeline crossing location. The Board further finds that TransCanada's anticipated requirements for permanent easements and temporary work space are reasonable and justified. The Board notes that no intervenor objected to the proposed crossing location or the requirements for new land rights.

Figure 4-1
Land Requirements for the Proposed St. Clair River Crossing
Modified Map from TransCanada's Application



4.2 Environmental Matters

The Board has completed an Environmental Screening Report pursuant to the *Canadian Environmental Assessment Act* ("CEAA") and the Board's own regulatory process. In accordance with Hearing Order GH-2-96, the Screening Report was released to those parties who requested a copy from the Board, to those federal agencies that had provided specialist advice on the proposed facilities, and to the Applicant.

The Board has considered the Environmental Screening Report and comments received on the report in accordance with Hearing Order GH-2-96, and is of the view that, taking into account the implementation of the proposed mitigative measures and those set out in the attached conditions, TransCanada's proposed St. Clair River Crossing and Dawn-Tecumseh Pig Receiver projects are not likely to cause significant adverse environmental effects. This represents a decision pursuant to paragraph 20(1)(a) of the CEAA.

The comments received, and the Board's views, have been added to the Environmental Screening Report as Appendices I and II respectively. Copies of the Board's Environmental Screening Report are available upon request from the Board's Regulatory Support Office.

4.3 Socio-Economic Matters

The Chippewas of Sarnia ("Chippewas") filed a letter of comment with the Board to state their position with respect to the issue of land title. The Chippewas have claimed an unextinguished aboriginal interest in the lands comprising the bed of the St. Clair River.

WIFN expressed concerns with the potential environmental and socio-economic impacts related to the proposed directional drill of the St. Clair River, including the potential of inadvertent returns of drilling fluid and the consequent impacts on WIFN's interests. These concerns involved the adequacy of TransCanada's cumulative effects analysis to address the potential for the resuspension of contaminated sediments and the possible bio-accumulation of contaminants in wetlands on the WIFN reserve.

By letter dated 25 March 1996, counsel for WIFN advised the Board that the First Nation has been satisfied that its concerns would be satisfactorily addressed through conditions of approval that had been negotiated with TransCanada. Accordingly, WIFN withdrew its opposition to the application and indicated that TransCanada would file at the hearing the conditions of approval for consideration by the Board which would address WIFN's concerns.

During the hearing, TransCanada filed the conditions of approval and undertook to comply with the conditions requiring TransCanada to perform additional sediment sampling and analysis to re-assess the potential effects of construction on downstream water quality, and if necessary, amend the proposed water quality monitoring program.

Views of the Board

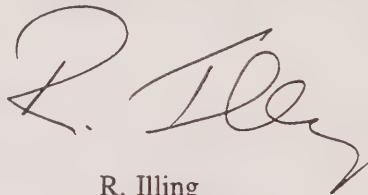
The Board notes that the Chippewas land claim has yet to be resolved and that TransCanada is dealing in good faith with the Province of Ontario, the registered owner of the bed of the St. Clair River. The Board further notes TransCanada's

extensive discussions with interested parties, most notably WIFN, and acknowledges TransCanada's undertaking to comply with the conditions of approval as part of its negotiated understanding with WIFN.

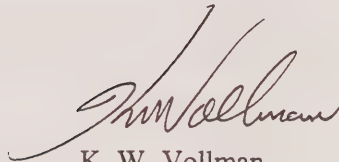
Chapter 5

Disposition

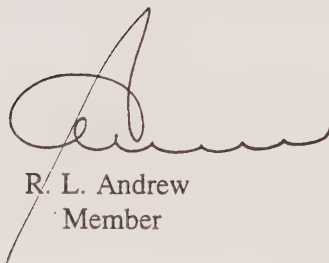
The foregoing Chapters, together with Order XG-T1-26-96, constitute our Decisions and Reasons for Decision in respect of the application heard before the Board in the GH-2-96 proceeding. The Board is satisfied from the evidence that the proposed facilities are in the public interest. The Board is also of the view that the design and location of the facilities are satisfactory to ensure their safe and environmentally sound construction and operation.



R. Illing
Presiding Member



K. W. Vollman
Member



R. L. Andrew
Member

Calgary, Alberta
May, 1996

Appendix I

Order XG-T1-26-96

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the regulations made thereunder; and

IN THE MATTER OF an application pursuant to section 58 of the Act, by TransCanada PipeLines Limited ("TransCanada"); filed with the Board under File No. 3400-T1-118.

BEFORE the Board on 22 May 1996.

WHEREAS the Board has received an application pursuant to section 58 of the Act from TransCanada, dated 19 December 1995 for the construction of a crossing of the St. Clair River, a pig receiver at the Dawn-Tecumseh Sales Meter Facility, a mainline valve and related tie-ins;

AND WHEREAS pursuant to the *Canadian Environmental Assessment Act* ("CEAA"), the Board has performed an environmental screening of the proposal and has considered all comments received in accordance with Hearing Order GH-2-96 regarding the CEAA environmental screening document, and the information submitted by TransCanada;

AND WHEREAS the Board has determined, pursuant to paragraph 20(1)(a) of the CEAA, that taking into account the implementation of TransCanada's proposed mitigative measures and those set out in the attached conditions, the proposal is not likely to cause significant adverse environmental effects;

AND WHEREAS the Board has examined the application pursuant to Hearing Order GH-2-96 and considers it to be in the public interest to grant the relief requested;

IT IS ORDERED THAT the project described as the St. Clair River Crossing, pig receiver at the Dawn-Tecumseh Sales Meter Facility, mainline valve and related tie-ins, at an estimated cost of \$ 4.18 million (1995\$) is exempt from the provisions of sections 30, 31 and 47 of the Act, upon the following conditions:

1. The pipeline facilities in respect of which this order is issued shall be the property of and shall be operated by TransCanada.
2. Unless the Board otherwise directs:
 - (a) TransCanada shall cause the approved facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information or data set forth in its application, or as

otherwise adduced in evidence before the Board, except as varied in accordance with subsection (b) hereof; and

- (b) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (a) without the prior approval of the Board.
3. Unless the Board otherwise directs, TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its application or as otherwise adduced in evidence through the application process.

Prior to Commencement of Construction

4. Unless the Board otherwise directs, TransCanada shall notify the Board of any modifications to the construction schedule from that proposed in the application.
5. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction, file with the Board copies of any provincial permits or authorizations which contain environmental conditions for the applied-for facilities and also maintain an information file in the construction office which would include any changes made in the field, and permits obtained following the commencement of construction.
6. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction, file with the Board a summary detailing results of discussions with all appropriate special interest groups and regulatory agencies; and maintain an information file in the construction office which includes:
- (a) a detailed listing of all site-specific mitigative measures to be employed as a result of undertakings to special interest groups or regulatory agencies; and
 - (b) an explanation of any constraints identified that may affect the construction program.
7. Unless the Board otherwise directs, TransCanada shall, at least 10 days prior to the disposal of any drilling waste, file with the Board all information which was required of TransCanada to meet all relevant provincial requirements and guidelines.
8. Unless the Board otherwise directs, TransCanada shall provide, when available, but at a minimum 10 days prior to construction, the results of the additional sediment sampling program that TransCanada committed to undertake.
9. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction:
- (a) serve the heritage resource survey for the area between MLV 501 and MLV 501 + 0.65 on the Archaeology and Heritage Planning Branch of the Ministry of Culture Tourism and Recreation of Ontario ("the Ministry");

- (b) seek the opinion of the Ministry concerning the acceptability or non-acceptability of the heritage resource survey; and
- (c) file with the Board comments from the Ministry including any concerns, recommendations and/or requirements in respect of the proposed construction activities for the area between MLV 501 and MLV 501 + 0.65.

During Construction

- 10. Unless the Board otherwise directs, TransCanada shall, at least 5 business days prior to the first disposal of drilling wastes, in the case of substances in the drilling waste which exceed limits prescribed by the provincial requirements and guidelines contemplated in Condition 7 hereof, provide the Board with the data analysis as to any such substance or substances, together with any plans for any mitigation with respect thereto which would be required to comply with such requirements and guidelines.
- 11. Unless the Board otherwise directs, TransCanada shall, during construction, file with the Board monthly construction progress and cost reports, in a format to be determined through consultation with Board staff, providing a breakdown, by location and facility, of costs incurred during that month, the percentage of each activity which has been completed and an update of costs to complete the project.
- 12. TransCanada shall, during construction, maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

Post Construction

- 13. Unless the Board otherwise directs, TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing a breakdown of the costs incurred in the construction of the additional facilities setting forth actual versus estimated costs, including reasons for significant differences from estimates
- 14.
 - (a) Unless the Board otherwise directs, TransCanada shall file with the Board a post-construction environmental report within six months of the in-service date.
 - (b) Unless the Board otherwise directs, the post-construction environmental report referred to in (a) above shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:
 - (i) indicate those issues resolved and those unresolved;
 - (ii) describe the measures TransCanada proposes to take in respect of the unresolved issues;
 - (iii) provide a detailed summary of any problems encountered during the directional drilling activities and the measures taken to deal with those problems, including the effectiveness of those measures;

- (iv) provide a report of the water quality monitoring program conducted during construction, including all data acquired;
 - (v) describe the effectiveness of the reclamation measures at the directional drill staging areas; and
 - (vi) provide preliminary results of the land farming operation.
- (c) Unless the Board otherwise directs, TransCanada shall file with the Board, on or before the 31 December that follows each of the first two complete growing seasons after the post-construction environmental report referred to in subsection (b) is filed:
- (i) a list of the environmental issues indicated as unresolved in the report and any that have arisen since the report was filed, including issues related to the land farming site;
 - (ii) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue; and
 - (iii) results of the land farming monitoring program.

Expiration of Order

15. Unless the Board otherwise directs prior to 31 December 1997, this order shall expire on 31 December 1997 unless the construction and installation with respect to each of the additional facilities has commenced by that date.

NATIONAL ENERGY BOARD

J.S. Richardson
Secretary

